

<b>Drinking-Water System Number:</b>	<b>220000460</b>
<b>Drinking-Water System Name:</b>	North Bay Water Drinking Water System
<b>Drinking-Water System Owner:</b>	The Corporation of the City of North Bay
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1, 2018 to December 31, 2018

**Complete if your Category is Large Municipal Residential or Small Municipal Residential**

Does your Drinking-Water System serve more than 10,000 people? Yes [  ] No [  ]

Is your annual report available to the public at no charge on a web site on the Internet? Yes [  ] No [  ]

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

The Corporation of the City of North Bay  
P.O. Box 360  
200 McIntyre Street East  
North Bay, ON P1B 8H8

**Complete for all other Categories.**

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [  ] No [  ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [  ] No [  ]

**Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report**

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
N/A	

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water? Yes [  ] No [  ]

Indicate how you notified system users that your annual report is available, and is free of charge.

- [  ] Public access/notice via the web  
[  ] Public access/notice via a newspaper

Describe your Drinking-Water System

The City of North Bay water treatment plant (WTP), water distribution facilities and water distribution piping system are owned and operated by the Corporation of the City of North Bay.

The City of North Bay Water Treatment System is classified as a "Large Municipal Residential" Drinking-Water System, Class 3 Water Treatment Plant and Class 4 Water Distribution System with Drinking-Water System Number: 220000460. The WTP, located at 248 Lakeside Drive in North Bay, treats water from Trout Lake which is part of the Mattawa River watershed. The WTP services a population of approximately 54,000, the permit to take water permits consumption up to 79,500 cubic meters per day.

The water distribution facilities consist of the following:

Ellendale Reservoir, High lift Pump Station & Re-chlorination Facility;

CFB Reservoir;

Canadore Pumping Station;

Cedar Heights Booster pumping station (not in service);

Judge Avenue Valve Chamber;

Birches Road Standpipe and Re-chlorination Station; and

Airport Road Standpipe, Booster Pumping Station and Re-chlorination Facility.

The membrane filtration water treatment plant has the design capacity of 79,500 cubic meters per day.

The plant is a SCADA controlled membrane filtration system with ultraviolet and chlorine disinfection.

The plant also doses fluoride along with caustic for pH adjustment and Control Max for corrosion control prior to delivery to the distribution system.

The membrane filtration plant meets the Ontario Drinking Water Standards requirements for the removal/disinfection of 3-log *Giardia Lambia*, 2-log *Cryptosporidium* and 4-log Viruses. The membrane filtration Primary Barrier provides for a 3- log *Giardia* removal, 2-log *Cryptosporidium* removal. The chlorine/UV disinfection Secondary Barrier provides for a 0.5 *Giardia* removal, 0.5-log *Cryptosporidium* removal and chlorine addition giving a 4- log virus removal.

In general the North Bay WTP can be described as follows:

#### Intake

A 1200mm diameter 45 series polyethylene intake pipe, with a capacity of 80,000 cubic meters per day. The pipe, constructed in 1973, extends approximately 300 meters into Delaney Bay of Trout Lake and includes an intake structure consisting of a steel inlet bell mouth with fiber reinforced plastic (FRP) cage and is in approximately 21.5 meters of water at low water level.

#### Membrane Feed Pump Well/Prescreening

Two (2) parallel sub-surface well chambers with level monitoring containing, two (2) 6mm mesh manual prescreen in series, five (5) vertical turbine pumps (4 duty and one standby) each rated at 20 m<sup>3</sup>/d feeding the primary membrane system.

#### Membrane Feed Strainers

Five (5) 300 micron automatic membranes feed strainers (four duties and one standby).

**Treatment Plant Process Areas**

**A building housing the following process components:**

- primary and secondary membrane filtration system;
- primary and secondary UV disinfection system;
- split chlorine contact tank;
- split high lift pump well
- three (3) chemical storage and delivery rooms housing membrane cleaning and neutralization chemical systems, pre-chlorination system, primary disinfection chemical system, secondary chlorination chemical system, alkalinity adjustment system, and fluoride addition system. Also includes;
  - high lift pumping;
  - Generator room;
  - Electrical room.
  - compressor/blower room

**Administration Area**

**Two floor administrative area including laboratory/control room, server room, multipurpose training room, offices, washrooms, women's and men's locker rooms, janitor room, building mechanical room and storage room.**

**Membrane Filtration**

**Eleven (11) pressurized primary membrane racks treating water from the membrane feed strainers, two(2) pressurized secondary membrane racks treating non-chemical backwash water from the primary membrane racks. The primary racks have a maximum production flow rate of 78.7 MLD based on raw water flow rate of 79.5 MLD, Ancillary systems including backwash pumps, instrument air for operating valves and integrity testing membranes, process blowers, and chemical cleaning and neutralization systems.**

**UV Disinfection Systems**

**Three (3) 600mm primary UV reactors (two duty and one standby) treating water from the eleven (11) pressurized primary membrane racks and two (2) secondary membrane racks. Each reactor contains medium pressure high intensity lamps housed in quartz sleeves; units equipped with self-cleaning mechanism and intensity sensors.**

**Chemical systems for:**

**Primary disinfection**

**Secondary (residual) disinfection**

**Fluoride Dosing**

**pH Adjustment**

**Corrosion Control**

**Membrane cleaning**

**Membrane cleaning solutions neutralization**

**Chlorine Contact Tank #1 and #2**

Two (2) baffled chlorine contact tanks in series with storage volumes of 688 cubic meters (tank #1) and 502 cubic meters (tank #2).

**High Lift Pump Well #1 and #2**

High lift pump well #1 has a capacity of approximately 240 cubic meters and is equipped with one (1) variable speed and two (2) constant speed vertical turbine high lift pumps each rated at 20 MLD. High lift pump well #2 has a capacity of approximately 240 cubic meters and is equipped with one (1) variable speed and one (1) constant speed vertical turbine high lift pump each rated at 20 MLD.

**Generator Room**

One (1) dual fuel generator set (NG/Diesel) with a rating of 2050KW, to provide power during peak hours and emergency situations.

**Wastewater Disposal System****Primary Membrane Backwash Tank**

Tank with a volume of approximately 310 cubic meters,  
Two (2) membranes feed pumps supplying water to the Secondary Membrane System.

**Secondary Waste Tank**

Tank with a volume of approximately 130 cubic meters,  
Two (2) pumps, one duty and one standby, to deliver water to the sanitary sewer.

**Neutralization Tank #1 and #2**

Two (2) tanks each with a volume of 150 cubic meters, pH and Chlorine Residual analyzers. To dechlorinate and adjust pH to suitable levels for wastewater plant.

**Sanitary Sewage Disposal**

One sump with two (2) submersible pumps in the Administration Area and two (2) sumps and two (2) submersible pumps in the Process Area discharging to the sanitary sewer along Lakeside Drive

The treated water is pumped to the distribution system.

The water distribution facilities can be described as follows:

**Ellendale Reservoir, High lift Pumping Station and Re-chlorination Facility**

The facility is a reinforced concrete at-grade, double cell, un-baffled, treated water reservoir, located at

the east end of Ellendale Drive. The reservoir has an approximate capacity of 18,200 cubic meters, with dimensions of 71 meters by 38 meters by 7 meters. The facility is equipped with a sodium hypochlorite re-chlorination system, on-line continuous water quality analyzers for free chlorine and turbidity. Standby power is available with a generator to operate the facility during power outages.

#### **Birch's Road Standpipe and Re-chlorination Station**

The facility consists of one (1) 39 meter high, 19 meter diameter, 11,775 cubic meter capacity, mixer pax system, the steel treated water standpipe located near the southwest corner of Birch's Road and Booth Road. The facility is equipped with sodium hypochlorite re-chlorination system, on-line continuous water quality analyzers for free chlorine and turbidity and fixed 7.5kW, 120/240 Volt single phase, diesel powered generator to power the re-chlorination and SCADA communications during prolonged power outages.

#### **Judge Avenue Valve Chamber**

The facility consists of a valve and is located near the northeast corner of Judge Avenue and Lakeshore Drive. The facility is equipped with a fixed 7.5kW 120.240 Volt single phase, diesel powered generator to power the valve and SCADA communications during prolonged power outages. Valve control for pressure or tower level integrated with Birches Standpipe. The equipment for a re-chlorination station is located at the facility however not currently in use.

#### **CFB North Bay Reservoir and Re-chlorination Facility**

The facility consists of a double cell 1820 cubic meter capacity, un-baffled reservoir and a re-chlorination facility located at the north end of Manston Crescent. The facility is equipped with on line continuous water quality analyzer for free chlorine and standby power.

#### **Canadore Pumping Station**

The facility is equipped with high lift pumps and pressurized cushion tanks to maintain pressure in the pressurized zone of the distribution system servicing Canadore College and Nipissing University. There is an on-line continuous water quality analyzer to monitor free chlorine residual and a 200kW, 347/600 Volt, 3 phase diesel generator to provide power and SCADA communications during prolonged power outages.

#### **Airport Standpipe, Booster Pumping Station**

This 4,000 cubic meter water storage standpipe, booster pumping station and re-chlorination facility was constructed in 2009. With the standpipe, high lift pumps, pressurized cushion tanks and a 500kW back-up diesel generator. This facility maintains pressure in the pressurized zone of the distribution system servicing the Airport and Carmichael Drive areas. The overall system consists of pressure zones 4 and 5 which accommodate a total of nine pumps; including three booster pumps (2 duty and 1 standby) for Zone 4, four booster pumps (3 duty and 1 standby) and two fire pumps for Zone 5. The water standpipe is connected to the zone 4 distribution header to provide

zone 4 fire flows and peak hour demand. It is also connect to the zone 5 fire pumps suction header to provide zone 5 fire demands. Zone 5 is equipped with four (4) pneumatic tanks connected to the Zone 5 discharge header to mitigate minor pressure fluctuations within the distribution system, and to provide some volume of available storage during power interruptions before the standby power system engages. This will mitigate the potential for negative pressure in the distribution system.

List all water treatment chemicals used over this reporting period

Sodium Hydroxide  
Sodium Hypochlorite  
Hydrofluosilicic Acid  
Control Max

Were any significant expenses incurred to?

- [ X ] Install required equipment
- [ X ] Repair required equipment
- [ X ] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred treatment and distribution of water to Major repair and replacement to ensure reliable the water system.

The major capital repairs and replacements include:

- Replaced Air Compressor at WTP with Ingersoll Rand compressor
- Replaced and programmed network cards at Water Treatment Plant
- Upgraded Ellendale reservoir high lift pumps and valves
- Replaced Water Treatment Plant UPS back up power
- Replaced 460m of 150mm water main on Graham Dr.
- Installed 320m of 400mm water main on Lakeshore Dr.
- Construction of 4100m<sup>3</sup> glass fused Water Storage standpipe on Laroque Rd.(Not in service)
- Installed 1046m of 400mm trunk water main and services to houses on Cedar Heights Rd.
- Installed 941m of 400mm distribution water main on Cedar Heights Rd.
- 39 Water services installed to residence on Cedar Heights Rd.

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
July 5, 2018	Cl2 Residual	0.04	mg/L	Failed to meet secondary disinfection. Free chlorine residual of 0.04mg/L at hydrant #8-1509. Flushed and resampled. Results met Ontario Drinking Water Quality Standards. AWQI # 140259	July 5, 2018
August 11, 2018	Total Coliform hit on Bacti Sample	6	CfU	Reported to MOE as required. Resampled at Zepher Heights, results come back good. AWQI# 141564	August 12, 2018
September 30, 2018	Cl2 Residual	0.01	mg/L	Failed to meet secondary disinfection. Free chlorine residual of 0.01mg/L at 1125 Vanier St. Flushed and resampled. Results met Ontario Drinking Water Quality Standards. AWQI # 142422	September 30, 2018
October 1, 2018	Cl2 Residual	<0.05	mg/L	Failed to meet secondary disinfection. Free chlorine residual < 0.05mg/L at hydrant 16-1560. Flushed and resampled. Results met Ontario Drinking Water Quality Standards. AWQI # 143301	October 1, 2018
November 5, 2018	Cl2 Residual	0.00	mg/L	Failed to meet secondary disinfection. Free chlorine residual of 0.00mg/L at Airport Sample Station. Flushed and resampled. Results met Ontario Drinking Water Quality Standards. AWQI # 143884	November 5, 2018
December 24, 2018	Turbidity	0.00	mg/L	Turbidity analyzer had a hardware malfunction setting scaling different from SCADA. Not allowing us to represent true turbidity value on SCADA. Called into MECP and reports, along with rack taken offline until problem is fixed. AWQI # 144404	December 27, 2018

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.coli (#)-(#)	Range of Total Coliform Results (#)-(#)	Number of samples Background Colony Counts	Range of Back-ground Colony Counts	Number of HPC Samples	Range of HPC Results (#)-(#)
<b>Raw</b>	52	0-5	0-142	52	22->200	N/A	N/A
<b>Treated</b>	52	0-0	0-0	52	0-4	52	0-6
<b>Distribution Fixed Sites</b>	364	0-0	0-0	364	0-2	104	0-55
<b>Distribution Random Sites</b>	520	0-0	0-0	520	0-54	156	0-54

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

<b>POE Grab Samples</b>	Number of Grab Samples	Range of Results (min #)-(max #)	ODWQS/Operational Requirement
<b>Turbidity</b>	<b>241</b>	<b>0.072 – 0.21 NTU</b>	<b>1.0 NTU max</b>
<b>Chlorine</b>	<b>306</b>	<b>0.74 – 1.76 mg/L</b>	<b>0.05 mg/L min.</b>
<b>Fluoride (If the DWS provides fluoridation)</b>	<b>183</b>	<b>0.0 – 0.91 mg/L</b>	<b>1.5 mg/L max</b>

<b>Distribution Free Chlorine Grab Samples</b>	Number of Grab Samples	Range of Results (min #)-(max #)	ODWQS Requirement
<b>Chlorine Fixed Sites</b>	<b>3582</b>	<b>0.30 – 2.06 mg/L</b>	<b>0.05mg/L min.</b>
<b>Chlorine Random Sites</b>	<b>520</b>	<b>0.0-1.22 mg/L</b>	<b>0.05 mg/L min.</b>



<b>POE on-line Continuous Analyzers</b>	<b>Number of Grab Samples</b>	<b>Range of Results (min #)-(max #)</b>	<b>ODWQS/Operational Requirement</b>
<b>Turbidity</b>	<b>8760</b>	<b>0.018 – 2.09 NTU</b>	<b>5.0 NTU max</b>
<b>Chlorine</b>	<b>8760</b>	<b>0.60 – 3.051 mg/L</b>	<b>0.05 mg/L min.</b>
<b>Fluoride (If the DWS provides fluoridation)</b>	<b>8760</b>	<b>0.0 - 0.967 mg/L</b>	<b>1.5 mg/L max</b>

**NOTE:** For continuous monitors use 8760 as the number of samples.

**Summary of Inorganic parameters tested during this reporting period or the most recent sample results**

<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
<b>Antimony</b>	<b>30 Jul 18</b>	0.0005	mg/L	no
<b>Arsenic</b>	<b>30 Jul 18</b>	<0.001	mg/L	no
<b>Barium</b>	<b>30 Jul 18</b>	0.01	mg/L	no
<b>Boron</b>	<b>30 Jul 18</b>	<0.01	mg/L	no
<b>Cadmium</b>	<b>30 Jul 18</b>	<0.0001	mg/L	no
<b>Chromium</b>	<b>30 Jul 18</b>	<0.001	mg/L	no
<b>Mercury</b>	<b>30 Jul 18</b>	<0.0001	mg/L	no
<b>Selenium</b>	<b>30 Jul 18</b>	<0.001	mg/L	no
<b>Sodium</b>	<b>30 Jul 18</b>	12.0	mg/L	no
<b>Fluoride</b>	<b>30 Jul 18</b>	0.66	mg/L	no
<b>Uranium</b>	<b>30 Jul 18</b>	<0.001	mg/L	no
<b>Nitrite</b>	10 Jan 18 04 Apr 18 09 Jul 18 01 Oct 18	<RDL <RDL <MDL <MDL	mg/L mg/L mg/L mg/L	no
<b>Nitrate</b>	10 Jan 18 04 Apr 18 09 Jul 18 01 Oct 18	<RDL <RDL <MDL <MDL	mg/L mg/L mg/L mg/L	no

\*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

**Summary of lead testing under Schedule 15.1 during this reporting period**

(Applicable to the following drinking water systems; large municipal residential systems, small Municipal residential systems and non-municipal year-round residential systems)

	Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Unit of Measure	Number of Exceedances
Round 1 Dec 15 2017 to Apr 15 2018	Plumbing	44	<0.001 – 0.0115	mg/L	1
	Distribution	8	0.0002 – 0.0061	mg/L	0
Round 2 June 15 2018 to Oct 15 2018	Plumbing	44	<0.001 – 0.0055	mg/L	0
	Distribution	8	<0.001 – 0.0064	mg/L	0

**Summary of Organic parameters sampled during this reporting period or the most recent sample results**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	30 Jul 18	<0.0005	mg/L	no
Atrazine + N-dealkylated metabolites	30 Jul 18	<0.0002	mg/L	no
Azinphos-methyl	30 Jul 18	<0.002	mg/L	no
Benzene	30 Jul 18	<0.0005	mg/L	no
Benzo(a)pyrene	30 Jul 18	<0.00001	mg/L	no
Bromoxynil	30 Jul 18	<0.0005	mg/L	no
Carbaryl	30 Jul 18	<0.005	mg/L	no
Carbofuran	30 Jul 18	<0.005	mg/L	no
Carbon Tetrachloride	30 Jul 18	<0.0002	mg/L	no
Chlorpyrifos	30 Jul 18	<0.001	mg/L	no
Diazinon	30 Jul 18	<0.001	mg/L	no
Dicamba	30 Jul 18	<0.001	mg/L	no
1,2-Dichlorobenzene	30 Jul 18	<0.0004	mg/L	no
1,4-Dichlorobenzene	30 Jul 18	<0.0004	mg/L	no
1,2-Dichloroethane	30 Jul 18	<0.0002	mg/L	no
1,1-Dichloroethylene (vinylidene chloride)	30 Jul 18	<0.0005	mg/L	no
Dichloromethane	30 Jul 18	<0.004	mg/L	no
2-4 Dichlorophenol	30 Jul 18	<0.0002	mg/L	no

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
<b>2,4-Dichlorophenoxy acetic acid</b>	30 Jul 18	<0.001	mg/L	no
<b>Diclofop-methyl</b>	30 Jul 18	<0.0009	mg/L	no
<b>Dimethoate</b>	30 Jul 18	<0.0025	mg/L	no
<b>Diquat</b>	30 Jul 18	<0.005	mg/L	no
<b>Diuron</b>	30 Jul 18	<0.01	mg/L	no
<b>Glyphosate</b>	30 Jul 18	<0.01	mg/L	no
<b>Malathion</b>	30 Jul 18	<0.0005	mg/L	no
<b>Metolachlor</b>	30 Jul 18	<0.001	mg/L	no
<b>Metribuzin</b>	30 Jul 18	<0.005	mg/L	no
<b>Monochlorobenzene</b>	30 Jul 18	<0.0005	mg/L	no
<b>Paraquat</b>	30 Jul 18	<0.001	mg/L	no
<b>Pentachlorophenol</b>	30 Jul 18	<0.001	mg/L	no
<b>Phorate</b>	30 Jul 18	<0.0005	mg/L	no
<b>Picloram</b>	30 Jul 18	<0.005	mg/L	no
<b>Polychlorinated Biphenyls(PCB)</b>	30 Jul 18	<0.0001	mg/L	no
<b>Prometryne</b>	30 Jul 18	<0.00025	mg/L	no
<b>Simazine</b>	30 Jul 18	<0.001	mg/L	no
<b>THM</b> (NOTE: show latest annual average)	30 Jul 18	79.72	ug/L	no
<b>Terbufos</b>	30 Jul 18	<0.0004	mg/L	no
<b>Tetrachloroethylene</b>	30 Jul 18	<0.0003	mg/L	no
<b>2,3,4,6-Tetrachlorophenol</b>	30 Jul 18	<0.001	mg/L	no
<b>Triallate</b>	30 Jul 18	<0.001	mg/L	no
<b>Trichloroethylene</b>	30 Jul 18	<0.0003	mg/L	no
<b>2,4,6-Trichlorophenol</b>	30 Jul 18	<0.001	mg/L	no
<b>Trifluralin</b>	30 Jul 18	<0.001	mg/L	no
<b>Vinyl Chloride</b>	30 Jul 18	<0.0002	mg/L	no
<b>2 Methyl-4-Chlorophenoxyacetic acid (MCPA)</b>	30 Jul 18	<0.01	mg/L	no

<b>THM Dist. Sample Location 55 Aviation Ave &amp; 201 Pinewood Park</b>	<b>1<sup>st</sup> Quarter Result Value</b>	<b>2<sup>nd</sup> Quarter Result Value</b>	<b>3<sup>rd</sup> Quarter Result Value</b>	<b>4<sup>th</sup> Quarter Result Value</b>	<b>Unit of Measure</b>	<b>Exceed- dance</b>
<b>Date Sampled</b>	Jan 4 – Mar. 6, 2018	Apr.3 – June. 4, 2018	July 5 – Sept. 4, 2018	Oct.2 – Dec. 27, 2018	<b>ug/L</b>	
<b>Bromodichloromethane (Average)</b>	4.2 4.2	3.5 3.5	3.8 3.7	3.5 3.4	<b>ug/L</b>	
<b>Bromoform(Average)</b>	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<b>ug/L</b>	
<b>Chloroform(Average)</b>	99.86 106.38	93.0 92.3	107.0 101.7	94.09 92.21	<b>ug/L</b>	
<b>Dibromochloromethane (Average)</b>	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<b>ug/L</b>	
<b>Total Trihalomethanes</b>	107.37	96.07	107.71	96.50	<b>ug/L</b>	
<b>THM Distribution Random Sample Location &amp; HLPS (Averages)</b>	<b>1<sup>st</sup> Quarter Result Value</b>	<b>2<sup>nd</sup> Quarter Result Value</b>	<b>3<sup>rd</sup> Quarter Result Value</b>	<b>4<sup>th</sup> Quarter Result Value</b>	<b>Unit of Measure</b>	<b>Exceed- dance</b>
<b>Sample Period</b>	Jan 4 –Mar. 6, 2018	Apr.3 – June. 4, 2018	July 5, - Sep.4, 2018	Oct.2 – Dec.27, 2018	<b>ug/L</b>	
<b>Bromodichloromethane</b>	3.2	2.6	2.6	2.5	<b>ug/L</b>	
<b>Bromoform</b>	<0.5	<0.5	<0.5	<0.5	<b>ug/L</b>	
<b>Chloroform</b>	103.83	71.42	70.42	78.53	<b>ug/L</b>	
<b>Dibromochloromethane</b>	<0.5	<0.5	<0.5	<0.5	<b>ug/L</b>	
<b>Total Trihalomethanes</b>	81.2	85.1	73.0	79.73	<b>ug/L</b>	
<b>Total Trihalomethanes 4 Quarter Average (Random &amp; Fixed Sites Included)</b>				79.72	<b>ug/L</b>	<b>No</b>

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	½ MAC VALUE	MAC VALUE	Date of Sample
THM	69.6	ug/L	50	100	Jan.4,2018
THM	81.6	ug/L	50	100	Jan.4,2018
THM	79.0	ug/L	50	100	Feb.5,2018
THM	50.8	ug/L	50	100	Feb.5,2018
THM	60.6	ug/L	50	100	Feb.5,2018
THM	78.2	ug/L	50	100	Feb.5,2018
THM	96.8	ug/L	50	100	Feb.5,2018
THM	50.5	ug/L	50	100	Feb.5,2018
THM	97.2	ug/L	50	100	Feb.13,2018
THM	98.1	ug/L	50	100	Feb.13,2018
THM	60.7	ug/L	50	100	Feb.13,2018
THM	57.7	ug/L	50	100	Feb.13,2018
THM	51.7	ug/L	50	100	Feb.13,2018
THM	141.0	ug/L	50	100	Mar.5,2018
THM	98.3	ug/L	50	100	Mar.5,2018
THM	71.3	ug/L	50	100	Mar.5,2018
THM	94.3	ug/L	50	100	Mar.5,2018
THM	74.6	ug/L	50	100	Mar.5,2018
THM	80.8	ug/L	50	100	Mar.5,2018
THM	170.0	ug/L	50	100	Mar.5,2018
THM	144.0	ug/L	50	100	Mar.5,2018
THM	67.8	ug/L	50	100	Mar.5,2018
THM	80.8	ug/L	50	100	Mar.5,2018
THM	134.0	ug/L	50	100	Mar.6,2018
THM	125.0	ug/L	50	100	Mar.6,2018
THM	84.5	ug/L	50	100	Mar.6,2018
THM	95.3	ug/L	50	100	Mar.6,2018
THM	50.7	ug/L	50	100	Mar.6,2018
THM	95.2	ug/L	50	100	Apr.3,2018
THM	89.9	ug/L	50	100	Apr.3,2018
THM	80.8	ug/L	50	100	Apr.3,2018
THM	57.1	ug/L	50	100	Apr.3,2018
THM	50.3	ug/L	50	100	Apr.3,2018
THM	63.5	ug/L	50	100	Apr.3,2018
THM	71.0	ug/L	50	100	Apr.3,2018
THM	64.0	ug/L	50	100	Apr.3,2018
THM	69.5	ug/L	50	100	Apr.3,2018
THM	59.2	ug/L	50	100	Apr.3,2018
THM	68.9	ug/L	50	100	Apr.4, 2018
THM	70.3	ug/L	50	100	Apr.4, 2018
THM	80.8	ug/L	50	100	Apr.4, 2018

Parameter	Result Value	Unit of Measure	½ MAC VALUE	MAC VALUE	Date of Sample
THM	53.4	ug/L	50	100	Apr.4, 2018
THM	78.7	ug/L	50	100	Apr.4, 2018
THM	86.2	ug/L	50	100	May.8,2018
THM	86.9	ug/L	50	100	May.8,2018
THM	51.8	ug/L	50	100	May.8,2018
THM	107.0	ug/L	50	100	May.8,2018
THM	85.2	ug/L	50	100	May.8,2018
THM	73.6	ug/L	50	100	May.8,2018
THM	60.0	ug/L	50	100	May.8,2018
THM	82.9	ug/L	50	100	May.8,2018
THM	76.4	ug/L	50	100	May.8,2018
THM	105.0	ug/L	50	100	May.8,2018
THM	82.2	ug/L	50	100	May.8,2018
THM	69.4	ug/L	50	100	May.8,2018
THM	69.5	ug/L	50	100	May.8,2018
THM	113.0	ug/L	50	100	May.9,2018
THM	111.0	ug/L	50	100	May.9,2018
THM	95.6	ug/L	50	100	June 4,2018
THM	97.0	ug/L	50	100	June 4,2018
THM	58.3	ug/L	50	100	June 4,2018
THM	88.0	ug/L	50	100	June 4,2018
THM	51.3	ug/L	50	100	June 4,2018
THM	54.8	ug/L	50	100	June 4,2018
THM	64.1	ug/L	50	100	June 4,2018
THM	53.2	ug/L	50	100	June 4,2018
THM	64.3	ug/L	50	100	June 4,2018
THM	91.7	ug/L	50	100	June 4,2018
THM	60.2	ug/L	50	100	June 4,2018
THM	50.5	ug/L	50	100	June 4,2018
THM	52.0	ug/L	50	100	June 4,2018
THM	111.0	ug/L	50	100	May.9,2018
THM	81.7	ug/L	50	100	Jul.5,2018
THM	77.5	ug/L	50	100	Jul.5,2018
THM	66.8	ug/L	50	100	Jul.16,2018
THM	81.8	ug/L	50	100	Jul.16,2018
THM	51.2	ug/L	50	100	Jul.16,2018
THM	69.0	ug/L	50	100	Aug.7,2018
THM	61.5	ug/L	50	100	Aug.7,2018
THM	75.5	ug/L	50	100	Aug.7,2018
THM	70.8	ug/L	50	100	Aug.7,2018
THM	90.2	ug/L	50	100	Aug.7,2018
THM	79.0	ug/L	50	100	Aug.7,2018
THM	72.5	ug/L	50	100	Aug.7,2018

Parameter	Result Value	Unit of Measure	½ MAC VALUE	MAC VALUE	Date of Sample
THM	75.3	ug/L	50	100	Aug.7,2018
THM	132.0	ug/L	50	100	Aug.8,2018
THM	115.0	ug/L	50	100	Aug.8,2018
THM	99.0	ug/L	50	100	Aug.8,2018
THM	74.5	ug/L	50	100	Aug.8,2018
THM	144.0	ug/L	50	100	Aug.9,2018
THM	132.0	ug/L	50	100	Aug.9,2018
THM	54.5	ug/L	50	100	Sep.4,2018
THM	55.2	ug/L	50	100	Sep.4,2018
THM	73.5	ug/L	50	100	Sep.4,2018
THM	52.6	ug/L	50	100	Sep.4,2018
THM	65.8	ug/L	50	100	Sep.4,2018
THM	111.0	ug/L	50	100	Sep.4,2018
THM	98.9	ug/L	50	100	Sep.4,2018
THM	110.0	ug/L	50	100	Sep.4,2018
THM	60.8	ug/L	50	100	Sep.4,2018
THM	96.8	ug/L	50	100	Sep.4,2018
THM	103.0	ug/L	50	100	Sep.4,2018
THM	50.1	ug/L	50	100	Sep.4,2018
THM	59.4	ug/L	50	100	Sep.4,2018
THM	50.2	ug/L	50	100	Oct.1,2018
THM	58.6	ug/L	50	100	Oct.1,2018
THM	72.6	ug/L	50	100	Oct.1,2018
THM	62.8	ug/L	50	100	Oct.1,2018
THM	83.0	ug/L	50	100	Oct.1,2018
THM	64.9	ug/L	50	100	Oct.1,2018
THM	64.4	ug/L	50	100	Oct.1,2018
THM	72.9	ug/L	50	100	Oct.1,2018
THM	136.0	ug/L	50	100	Oct.2,2018
THM	132.0	ug/L	50	100	Oct.2,2018
THM	130.0	ug/L	50	100	Oct.2,2018
THM	142.0	ug/L	50	100	Oct.2,2018
THM	76.3	ug/L	50	100	Oct.2,2018
THM	80.9	ug/L	50	100	Oct.2,2018
THM	50.5	ug/L	50	100	Oct.2,2018
THM	135.0	ug/L	50	100	Dec.3,2018
THM	73.1	ug/L	50	100	Dec.3,2018
THM	88.0	ug/L	50	100	Dec.3,2018
THM	62.0	ug/L	50	100	Dec.3,2018
THM	87.0	ug/L	50	100	Dec.3,2018
THM	83.9	ug/L	50	100	Dec.3,2018
THM	126.0	ug/L	50	100	Dec.3,2018
THM	85.9	ug/L	50	100	Dec.3,2018

Parameter	Result Value	Unit of Measure	½ MAC VALUE	MAC VALUE	Date of Sample
THM	85.6	ug/L	50	100	Dec.3,2018
THM	103.0	ug/L	50	100	Dec.3,2018
THM	138.0	ug/L	50	100	Dec.3,2018
THM	135.0	ug/L	50	100	Dec.3,2018
THM	93.1	ug/L	50	100	Dec.3,2018
THM	87.2	ug/L	50	100	Dec.3,2018
THM	51.7	ug/L	50	100	Dec.3,2018
THM	75.1	ug/L	50	100	Dec.27,2018
THM	52.7	ug/L	50	100	Dec.27,2018
THM	66.2	ug/L	50	100	Dec.27,2018
THM	62.4	ug/L	50	100	Dec.27,2018
THM	60.6	ug/L	50	100	Dec.27,2018
THM	87.3	ug/L	50	100	Dec.27,2018
THM	54.0	ug/L	50	100	Dec.27,2018
THM	69.4	ug/L	50	100	Dec.27,2018
THM	98.8	ug/L	50	100	Dec.27,2018
THM	88.9	ug/L	50	100	Dec.27,2018
THM	55.5	ug/L	50	100	Dec.27,2018
THM	54.8	ug/L	50	100	Dec.27,2018

\*In all the cases marked with \* the analysis result value was less than the lab detection limit. However the lab detection limit